

PATENT COOPERATION TREATY

PCT

REC'D: 06 DEC 2004

INTERNATIONAL PRELIMINARY EXAMINATION REPORT PCT
(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference K 1518 PCT | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/US 03/26011 | International filing date (day/month/year) 21.08.2003 | Priority date (day/month/year) 24.09.2002 |
| International Patent Classification (IPC) or both national classification and IPC E01F9/03 | | |
| Applicant 3M INNOVATIVE PROPERTIES COMPANY et al. | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:
 - I Basis of the opinion
 - II Priority
 - III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV Lack of unity of invention
 - V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI Certain documents cited
 - VII Certain defects in the international application
 - VIII Certain observations on the international application

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|---|---|
| Date of submission of the demand 29.03.2004 | Date of completion of this report 03.12.2004 |
| Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | Authorized Officer Isailovski, M Telephone No. +49 89 2399-7263 |



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US 03/26011

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-17 as originally filed

Claims, Numbers

1-5 as originally filed

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US 03/26011

5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|-----|
| Novelty (N) | Yes: Claims | 1-5 |
| | No: Claims | |
| Inventive step (IS) | Yes: Claims | 1-5 |
| | No: Claims | |
| Industrial applicability (IA) | Yes: Claims | 1-5 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US03/26011

1. Reference is made to the following document:

D1: US-A-5 975 706

Re Item V

2. In the light of the documents cited in the international search report, the invention as claimed meets the criteria mentioned in Article 33(1) PCT, i.e. it is **new and involves an inventive step**.

3. **Independent claim 1**

- 3.1 The document D1 discloses (the references in parentheses applying to this document):

A reflector (Fig.1, (10)=reflective plate) comprising: a supporting body (Fig.1, (1)=substrate) which has a base having a surface extending in a longitudinal direction (Fig.1, the direction of the distance P) and a plurality of projections having a sloping surface sloping with respect to the surface of the base and being provided in the longitudinal direction of the surface of the base at regular intervals and bonded to the surface of the base (Fig.1, (4)=plurality of projections, formed by embossing; column 3, lines 2-5), and a reflection sheet (Fig.1, (2)=retroreflective sheet) which has sections between the projections disposed between projections on the surface of the base and sloping sections adhering to the sloping surface of the projections (Fig.1, (3)=flat base portions; column 2, line 66 - column 3, line 3);

wherein the length of the surface between the projections in the direction perpendicular to the longitudinal direction (direction of width) of the surface of the base is larger than the length of the projection in the same direction (direction of width), and the

surface of the base has at least one peripheral surface of each projection extending along the periphery of the latitudinal direction of the projections at each of the projections so as to link the adjacent surfaces between projections (figures 2-4; see in particular fig.2b, assuming the dash-dot line as representing the longitudinal direction of the reflector);

and the reflection sheet further includes a peripheral section disposed on the peripheral surface of each projection to link the adjacent sections between the projections, and the sloping section of the reflection sheet is linked with one of the two adjacent sections between the projections (figures 1,2-4, (3)=base portion, (4)=protrusion; column 3, lines 5-10)

3.2 The problem to be solved by the present application is:

to provide a reflector capable of reflecting light at a wide angle of incidence, for which the manufacturing time can be shortened, and wherein during its manufacturing, the reflection sheet is prevented from being cracked or peeled from the supporting body.

3.3 To solve the problem, the applicant develops a reflector according to the above mentioned paragraph 3.1, wherein said device furthermore comprises the following technical features

The sloping section is separated from the other (adjacent) section and the peripheral section of the projection.

3.4 This combination of features of independent claim 1, is neither known from, nor rendered obvious by, the available prior art cited in the international search report.

4. Inasmuch as claims 2-5 depend from claim 1, their subject-matter is therefore novel and inventive.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US03/26011

5. The subject-matter according to any of claims 1-5 is industrially applicable.
6. Therefore, the requirements of Article 33(2), (3) and (4) PCT are met.

7. REMARKS

- 7.1 In order to facilitate the understanding of the claims, the features of the claims should have been provided with reference signs placed in parentheses, according to the requirements of Rule 6.2(b) PCT.
- 7.2 To meet the requirements of Rule 6.3(b) PCT, the independent claim 1 should have been properly cast in the two part form, with those features which in combination are part of the prior art being placed in the preamble (see document D1, see also paragraph 3.1; for the characterising portion, see point 3.3)
- 7.3 To meet the requirements of Rule 5.1(a)(ii) PCT, documents D1 should have been identified in the description and the relevant background art disclosed therein should have been briefly discussed.